



UNITED STATES PATENT AND TRADEMARK OFFICE

UNITED STATES DEPARTMENT OF COMMERCE
United States Patent and Trademark Office
Address: COMMISSIONER FOR PATENTS
P.O. Box 1450
Alexandria, Virginia 22313-1450
www.uspto.gov

APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/724,080	12/01/2003	Hiroyuki Nakamoto	19546.0035	1672
23517	7590	11/09/2005	EXAMINER	
SWIDLER BERLIN LLP 3000 K STREET, NW BOX IP WASHINGTON, DC 20007			WILLIAMS, HOWARD L	
			ART UNIT	PAPER NUMBER
			2819	

DATE MAILED: 11/09/2005

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary

Application No.

10/724,080

Applicant(s)

NAKAMOTO ET AL.

Examiner

Howard L. Williams

Art Unit

2819

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☐ Responsive to communication(s) filed on ____.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-10 is/are pending in the application.
- 4a) Of the above claim(s) ____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) ____ is/are allowed.
- 6) ☒ Claim(s) 1-10 is/are rejected.
- 7) ☐ Claim(s) ____ is/are objected to.
- 8) ☐ Claim(s) ____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 01 December 2003 is/are: a) ☒ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
 2. ☐ Certified copies of the priority documents have been received in Application No. ____.
 3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- | | |
|--|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input type="checkbox"/> Interview Summary (PTO-413)
Paper No(s)/Mail Date. ____. |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | 5) <input type="checkbox"/> Notice of Informal Patent Application (PTO-152) |
| 3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)
Paper No(s)/Mail Date ____. | 6) <input type="checkbox"/> Other: ____. |

Claims 1, 4 and 5 are objected to because of the following informalities: In claim 1 it is wondered whether a distinguishing modifier for "said predetermined voltage" in line 5 is in order. These two claims recite that the amplifier comprises a channel width. It seems that this phrase should include a reference to a transistor which has a channel width, in order to avoid any ambiguity as to what the words mean. Appropriate correction is required.

The following is a quotation of the second paragraph of 35 U.S.C. 112:

The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.

Claim 10 is rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention. The phrase said comparator in line 11 lacks antecedent basis.

The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

*A person shall be entitled to a patent unless –
(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.*

Claims 1-3 and 6-10 are rejected under 35 U.S.C. 102(b) as anticipated by U.S. Patent 5,952,951 to Fujino. The Fujino patent discloses an amplifier (Q5; fig. 3) with a first switch (Q17; fig. 3) that stops the supply of electric power to the amplifier and a second switch (Q18; fig. 3) that fixes the output of the amplifier to a predetermined voltage. Fujino discloses the use of his chopper comparator in ADCs generally and half-flash or sub-ranging and flash ADCs in particular. Consequentially it would be inherent that there would be a plurality of the chopper comparators.

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

Claims 4 and 5 are rejected under 35 U.S.C. 103(a) as unpatentable over U.S. Patent 5,952,951 to Fujino in view of U.S. Patent 4274014 A to Schade, Jr. Fujino mentions speed of operation of the comparator but does not discuss how transistor sizing, specifically channel width and ON-resistance affects the operation speed. Schade, Jr. in column 6 lines 59-61 discloses that by adjustment of device sizes the switching point can be set to any convenient level. Accordingly it is considered that it would have been obvious in view of Schade, Jr. to adjust device sizes, i.e. the channel width, of the MOS inverters in Fujino to achieve the desired operational characteristics as taught by Schade, Jr.

The prior art made of record and not relied upon is considered pertinent to applicant's disclosure. U.S. Patent 6,861,878 B2 to Haruhana et al. discusses a chopper comparator with provision to disconnect the inverters from the supply terminals during periods of non-operation. U.S. Patent 4,893,124 A discloses variations that can be used for the inverters in a sub-ranging or parallel ADC environment. U.S. Patent 5,247,301 to Yahagi et al. discusses MOS transistor width/length ratios affect operation speeds and ON-resistance.

Any inquiry concerning this communication should be directed to Howard L. Williams at telephone number 571.272.1815. The Patent and Trademark Office has a

Application/Control Number: 10/724,080
Your Reference: 19546.0035
Art Unit: 2819

4

new central facsimile number for application specific correspondence intended for entry,
it is 571-273-8300.

11/3/05
Voice: (571) 272-1815



Howard L. Williams
Primary Examiner
Art Unit 2819